WHAT IS CLAIMED IS:

1. A method for making a pressure actuated switching device comprising the steps of:

a) providing at least a first sheet of green rubber material,

b) applying at least a first layer of conductive polymeric coating material to at least a portion of a surface of the first sheet of green rubber material;

c) solidifying the first conductive polymeric coating; and,

d) vulcanizing the first sheet of green rubber material to form an elastomeric first substrate.

2. The method of claim 1 additionally comprising the steps of:

providing a second sheet of green rubber material, applying a second layer of conductive polymeric coating material to a portion of a surface of the second sheet of green rubber material,

joining the first and second sheets of green rubber material along respective lengthwise edges thereof such that the first and second layers of conductive polymeric coating

material are in a spaced-apart opposing relationship to each other, and

vulcanizing the first and second sheets of green rubber material to form elastomeric first and second substrates.

3. The method of claim 1 wherein the green rubber material includes ethylene-propylene-diene monomer.

4. The method of claim 1 wherein the a release sheet is attached to one side of the first sheet of green rubber.

5. The method of claim 1 wherein the conductive polymeric coating material comprises an elastomeric polymer binder, a conductive filler, and a solvent or diluent.

6. The method of claim 5 wherein the filler includes particles of conductive material selected from the group consisting of copper, silver, gold, zinc, aluminum, nickel, silver coated copper, silver coated glass, silver coated aluminum, graphite powder, graphite fibers, carbon fibers and carbon black.

7. The method of claim 5 wherein the solvent includes a compound selected from the group consisting of methylethyl ketone, diethyl ketone, acetone, tetrahydrofuran, butyl acetate, isopropanol, naphtha, hexane, octane, toluene and xylene.

8. The method of claim 5 wherein the diluent is water.

9. The method of claim 1 wherein the conductive polymeric coating material includes a conductive filler and a blowing agent.

10. The method of claim 9 wherein the first layer of conductive polymeric coating material is a strip of green rubber laminated to the first sheet of green rubber.

11. The method of claim 9 wherein the conductive polymeric coating material is a fluid material additionally comprising a green rubber binder and a solvent or diluent.

12. The method of claim 11 further including the step of activating the blowing agent simultaneously with the step of vulcanizing.

13. The method of claim 9 wherein the conductive filler includes particles of conductive material selected from the group consisting of copper, silver, gold, zinc, aluminum, nickel, silver coated copper, silver coated glass, silver coated aluminum, graphite powder, graphite fibers, carbon fibers and carbon black, wherein said particles comprise both powder and fibers.

14. The method of claim 11 wherein the fluid conductive polymeric coating material is applied by spraying, casting, roller application, silk screening, rotogravure printing, knife coating, curtain coating, or offset coating.

15. The method of claim 10 wherein the first layer of conductive polymeric coating material is cross-linked to the first sheet of green rubber by co-vulcanization.

16. The method of claim 1 wherein a second layer of conductive polymeric material is applied to the first sheet green rubber, and said first sheet of green rubber is folded into a configuration wherein the first and second layers of conductive polymeric coating material are in a spaced apart opposing relationship to each other.

17. A system for making a pressure sensitive switching device, the system comprising:

a) a supply of first green rubber sheet;

b) means for applying a first layer of fluid conductive polymeric coating material to a surface of the first green rubber sheet;

c) means for solidifying the first layer of fluid conductive polymeric coating material;

d) a heater for vulcanizing the green rubber sheet.

18. The system of claim 16 further comprising:

a supply of second green rubber sheet;

means for applying a second layer of fluid conductive polymeric coating material to a surface of the second green rubber sheet;

means for solidifying the second layer of fluid conductive polymeric coating material; and

means for joining the first and second green rubber sheets along respective lengthwise edges thereof such that the first and second layers of fluid conductive coating material are in a spaced apart opposing relationship to each other.

19. The system of claim 17 wherein a release sheet is attached to the green rubber sheet, and the system includes means for separating the release sheet from the green rubber sheet.

20. The system of claim 17 wherein the means for solidifying the first layer of fluid conductive polymer coating material comprises a dryer.

21. The system of claim 17 wherein the means for applying the fluid conductive polymeric coating material is selected from the group consisting of means for casting, means for rolling, silkscreen, rotogravure printer, means for knife coating, means for curtain coating and means for offset coating.

22. The system of claim 18 wherein the means for joining the first and second green rubber sheets includes a rotary system including at least two rollers between which the first and second green rubber sheets are continuously passed.

23. The system of claim 18 wherein the means for joining the first and second green rubber sheets includes a linear clamping press having first and second dies which are movable relative to each other to open and close the linear clamping press.

24. A pressure actuated switching device which comprises:

a) a housing fabricated from a non-conductive elastomeric polymer;

b) at least two separate conductive electrode layers fixedly attached to the housing and positioned in spaced apart opposing relationship to each other, at least one of the conductive electrode layers being fabricated from a composition containing the elastomeric polymer and a conductive particulate filler, wherein said at least one conductive electrode layer is bonded by chemical cross links to the housing.

25. The pressure actuated switching device of claim 24 wherein the housing comprises a first substrate and a second substrate bonded to each other along the respective lengthwise edges thereof.

26. The pressure actuated switching device of claim 24 wherein said at least one electrode is a cellular polymeric foam.

27. The pressure actuated switching device of claim 26 wherein the conductive particulate filler comprises conductive powder and conductive fibers.

28. The pressure actuated switching device of claim 24 wherein the housing comprises a flat base and a corrugated top cover joined to the flat base so as to form a plurality of elongated parallel cells.

29. The pressure actuated switching device of claim 24 wherein the housing comprises an elongated flat base, and wherein at least one conductive electrode layer is a foamed conductive rubber strip chemically bonded by cross linking to the flat base, and the other of said conductive electrode layers is an elongated conductive rubber having an arcuate shaped cross section and which is chemically bonded by cross linking to the flat base along at least one lengthwise interface between the elongated flat base and the elongated conductive rubber.

30. The pressure actuated switching device of claim 24 further including at least two conductive wires, each conductive wire being connected to a respective one of the conductive electrode layers.

31. The pressure actuated switching device of claim 24 wherein the housing comprises an elongated upper portion and an elongated base, the upper portion having opposite lengthwise edges configured to engage corresponding lengthwise slots in the base, the base comprising an upwardly projecting ridge wherein one said conductive electrode layer is chemically bonded by cross linking to an upper surface of the ridge and the other of said conductive electrode layers is chemically bonded to a lower surface of the upper portion.

32. The pressure actuated switching device of claim 31 wherein the upper portion has an arcuate cross section and the upper surface of the ridge is arcuate.

33. The pressure actuated switching device of claim 31 wherein the upper portion includes at least one outwardly projecting lengthwise extending protrusion.

34. The pressure actuated switching device of claim 33 wherein the upper portion includes at least three outwardly projecting lengthwise extending protrusion.

35. The pressure actuated switching device of claim 24 wherein the housing comprises an elongated single piece member folded along a lengthwise bend to define an upper portion and a base portion, wherein one of said conductive electrode layers is chemically bonded by cross linking to the upper portion and the other of said conductive electrode layers is chemically bonded by cross linking to the base portion.

36. The pressure actuated switching device of claim 24 wherein the housing includes a lengthwise extending outer cover configured to form a tubular portion and a flange, wherein the two conductive electrode layers are disposed opposite each other along an inside surface of the tubular portion and are chemically bonded by cross linking thereto, and the flange comprises two walls of the outer cover bonded to each other along a common interface.

37. The pressure actuated switching device of claim 24 wherein the housing includes a lengthwise extending outer cover configured to form a tubular portion having an inner surface defining a bore and first and second flange-forming walls, and a second member having a flange portion and an end portion extending into the bore of the tubular portion, wherein the flange portion of the second member is disposed between the first and second flange-forming walls of the outer cover so as to form a first interface between the first flange-forming wall and a first side surface of the flange portion and a second interface between the second flange-forming wall and a second side surface of the flange portion, wherein one conductive electrode layer is bonded by chemical cross linking to the outer cover and extends along the first interface and along the inner surface of the tubular portion, and the other of the conductive electrode layers is chemically bonded by cross linking to the second member and extends along the second interface and around the end portion of the second member.

38. The pressure actuated switching device of claim 24 wherein the housing includes a lengthwise extending outer cover configured to form a tubular portion having an inner

surface defining a bore and first and second flange-forming walls, and a second member disposed between the first and second flange-forming walls of the outer cover so as to form a first interface between the first flange-forming wall and a first side surface of the second member and a second interface between the second flange-forming wall and a second side surface of the second member, wherein one conductive electrode layer is bonded by chemical cross linking to the outer cover and extends along the first interface and along a first portion of an inside surface of the bore of the tubular portion, and the other conductive electrode layer is bonded by chemical cross linking to the outer cover and extends along the second interface and along a second portion of the inside surface of the bore of the tubular portion, wherein the conductive electrode layers have a crenelate shaped edge.

39. The pressure actuated switching device of claim 24 wherein the housing comprises an elongated flat base and an elongated upper portion having an arcuate cross section, and wherein a first conductive electrode layer is bonded by chemical cross links to an upper surface of the base and a second conductive electrode layer is bonded by chemical

cross links to a lower surface of the elongated upper portion of the housing.

40. The pressure actuated switching device of claim 39 further comprising an elongated member having an arcuate cross section disposed between the base and the upper portion of the housing, said elongated member having an upper surface and a lower surface, wherein a third conductive electrode layer is bonded by chemical cross links to the upper surface of the elongated member and a fourth conductive electrode layer is bonded by chemical cross links to the lower surface of the elongated member.

41. A method for assembling a pressure actuated tubular switch assembly comprising the steps of:

a) providing a tubular sensor which includes a resiliently deformable lengthwise extending housing, the housing having an inner wall defining a lengthwise extending interior space, the tubular sensor having first and second conductive electrode films in opposing spaced apart relation and disposed lengthwise along respective portions of the inner wall, the housing being deformably movable between a biased open switch first position wherein the first and

second conductive electrode films are spaced apart from each other, and a closed-switch second position wherein the first and second conductive electrode films are in electrical contact with each other;

b) providing a terminal plug assembly including at least one wire lead attached to a contact plate having first and second contact electrodes disposed respectively on opposite sides of the contact plate, and a malleable, deformable ferrule;

c) inserting the contact plate into an open end portion of the tubular sensor wherein the end portion of the tubular sensor is at least partially surrounded by the ferrule;

d) crimping the ferrule to a position wherein the end portion of the tubular sensor is compressed such that the first conductive electrode film is in electrical contact with the first contact electrode and the second conductive electrode film is in electrical contact with the second contact electrode.

42. The method of claim 41 wherein the housing of the tubular sensor is fabricated from green rubber.

43. The method of claim 41 wherein the ferrule is fabricated from metal or plastic.

44. The method of claim 41 wherein the step of crimping the ferrule comprises positioning the end portion of the tubular sensor in a containment vise and applying mechanical pressure to the ferrule.

45. The method of claim 41 further comprising the step of sealing an opposite end portion of the tubular sensor.